REMARKS

This application is amended in a manner to place it in condition for allowance at the time of the next Official Action.

The amendment to the claims and the newly cited evidence are expected to require further search and/or consideration. Accordingly, a Request for Continued Examination is being filed with this amendment.

Status of the Claims

Claim 21 is amended to clarify that the single emulsion of step a) is subjected to controlled laminar shearing, and the solvent is removed from the organic phase resulting therefrom to obtain microspheres.

Claims 21-33, 35-38 and 40 remain in this application.

Claim Rejections-35 USC §102

Claims 21-28, 31, 34-36, 38 and 40 were rejected under 35 U.S.C. §102(b) as being anticipated by COLLINS WO 03/106809 A1 (COLLINS). This rejection is respectfully traversed for the reasons below.

COLLINS relates to microparticles useful for treating hydrocarbon formations to inhibit scale deposits.

The microparticles of COLLINS may comprise ethanol, which is extractable into the primary oil phase. However, ethanol is not a pharmaceutically active ingredient, as evidenced by the

enclosed page 15 of "Handbook of Pharmaceutical Excipients". This page demonstrates that ethanol is regarded as an excipient in pharmaceutical formulations and not as pharmaceutically active ingredient.

Indeed, COLLINS describes microparticles constituted of an aqueous solution of a water soluble oil or gas field production chemical encapsulated by a degradable polymeric material. None of these products suggests the inclusion of a pharmaceutically active ingredient.

Moreover, these microparticles are not obtained from a single emulsion. The microparticles prepared by first pouring a single emulsion W/O into either oil (preparation of a double emulsion W/O/O - see example 1) or water (preparation of a double emulsion W/O/W - see example 2). Then, the obtained double emulsions are subjected to shearing to obtain microparticles.

Neither the single emulsion nor the double emulsions include laminar shearing. With respect to the single emulsion, COLLINS explicitly discloses "intensive blending" and prefers "high shear conditions" (Page 9, lines 2-12). With respect to the preparation of the double emulsion high shear conditions are also preferred (Page 13, lines 3-13.)

Thus, the process of COLLINS does not disclose a step of subjecting a single emulsion to laminar shearing. Hence, the process described in COLLINS does not comprise steps b), c) and d) as now defined by independent claim 21.

Therefore, claim 21 and dependent claims 22-28, 31, 34-36, 38 and 40, are not anticipated by COLLINS, and withdrawal of the rejection is respectfully requested.

Claim Rejections-35 USC §103

Claims 21, 25-28, 31, 34-36 and 38 were rejected under 35 U.S.C. §103(a) as being unpatentable over COLLINS in view of LOBO et al. US 5,589,332 (LOBO). This rejection is respectfully traversed for the reasons that follow.

The position of the Official Action was that COLLINS teaches a method of producing a monodisperse population of microspheres and that LOBO describes that the viscosity ratio is correlated to the particle size.

As discussed above relative to the anticipation rejection based on COLLINS, COLLINS fails to each:

- a pharmaceutically active ingredient,
- subjecting a single emulsion to laminar sheer, and
- removing the solvent from the single emulsion to obtain microparticles.

LOBO is not able to remedy these deficiencies of COLLINS for reference purposes.

LOBO describes a process of making a fine photographic direct dispersion in the absence of auxiliary solvents. The process involves high shear, such as obtained by a Brinkmann rotor starter device (see col. 15, l. 14), followed by the use of

a homogenizer at a high pressure. Such mixing at high shear and high pressure cannot be controlled laminar sheer. That is, high shear induces turbulence, and thus differs from controlled laminar shear. It is further described that, in order to form a fine dispersion of the organic phase having an average particle size of less than 0.5 micron, the ratio of the organic phase viscosity to the aqueous solution viscosity is more than 2.0.

Thus, neither COLLINS nor LOBO teaches a method involving a single emulsion comprising a pharmaceutically active ingredient. Further, neither of these documents suggests a method comprising the steps b), c) and d) as defined in amended claim 21 (no single emulsion subjected to controlled laminar shearing).

Therefore, the subject matter of claims 21, 25-28, 31, 34-36 and 38 is non-obvious over COLLINS in view of LOBO, and withdrawal of the rejection is respectfully requested.

Claims 29, 30, 32 and 33 were rejected under 35 U.S.C. §103(a) as being unpatentable over COLLINS in view of LOBO further in view of OKADA et al. US 5,643,607 (OKADA). This rejection is respectfully traversed for the reasons that follow below.

COLLINS and LOBO, as noted above, relative to the obviousness rejection of independent claim 1, fail to teach or even approach the claimed invention.

OKADA describes microcapsules designed for sustained release of physiologically active peptide, OKADA describes microspheres wherein the release kinetics of the active substance is non-homogenous, as said microspheres have a broad particle size distribution and thus are not monodispersed.

These microcapsules are prepared by subjecting to microencapsulation a W/O/W emulsion, the dispersed aqueous phase of which contains active substances. The W/O/W emulsion is prepared from a single emulsion W/O, which is then poured in water. The obtained double emulsions are then subjected to microencapsulation.

Thus, the described process does not comprise a step consisting of subjecting a single emulsion to laminar shearing (corresponding to step b) as defined in claim 1).

As a result, the skilled person combining the teachings of COLLINS, LOBO and OKADA would arrive at the claimed method comprising the steps b), c) and d) as defined in amended claim 21 (no single emulsion subjected to controlled laminar shearing).

The subject matter of claims 29, 30 and 32-33 is therefore non-obvious over COLLINS in view of LOBO and OKADA.

Claims 37 was rejected under 35 U.S.C. §103(a) as being unpatentable over COLLINS in view of BIBETTE US 5,938,581 (BIBETTE). This rejection is respectfully traversed for the reasons that follow below.

As discussed above relative to the anticipation rejection based on COLLINS, COLLINS fails to each:

- a pharmaceutically active ingredient,
- subjecting a single emulsion to laminar sheer, and
- removing the solvent from the single emulsion to obtain microparticles.

BIBETTE is unable to remedy these shortcomings of COLLINS for reference purposes.

BIBETTE describes a process for preparing a secondary emulsion starting with a polydispersed primary emulsion (col. 1, l. 50-55). BIBBETTE teaches that the primary emulsion may be subjected to controlled laminar shearing, such as by use of a couette device.

However, such a type of preparation is contrary to the requirements of COLLINS "intensive blending" and preferred "high shear conditions" (Page 9, lines 2-12). Thus, one of ordinary skill in the art would have been discouraged from even combining the teachings of BIBETTE with COLLINS.

Moreover, even if one were to ignore the fact that the shearing is contrary to requirements of COLLINS, the combination of COLLINS and BIBETTE fails to teach that claimed invention. BIBETTE does not disclose either (i) preparing microparticles or (ii) an emulsion having an organic phase which comprises a pharmaceutically active ingredient.

Thus, the skilled person combining the teachings of COLLINS and BIBETTE would not arrive at the claimed method involving a single emulsion comprising a pharmaceutically active ingredient (absent in the methods of both documents) and comprising the steps c) and d) as defined in amended claim 21 (no removal of the solvent from the organic phase of the single emulsion obtained by subjecting a single emulsion as defined in step a) to controlled laminar shearing).

The subject matter of claim 37, depending on claim 21, is therefore non-obvious over COLLINS in view of BIBETTE, and withdrawal of the rejection is respectfully requested.

Conclusion

In view of the amendment to the claims, the cited evidence and the foregoing remarks, this application is in condition for allowance at the time of the next Official Action. Allowance and passage to issue on that basis is respectfully requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future submissions, to charge any deficiency or credit any overpayment to Deposit Account No. 25-0120 for any

additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

/Robert A. Madsen/

Robert A. Madsen, Reg. No. 58,543
209 Madison Street, Suite 500
Alexandria, VA 22314
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

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APPENDIX:

The Appendix includes the following item(s):

- Rowe et al., Handbook of Pharmaceutical Excipients, Fourth Edition, 2003, pages 12-15.